CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Mooresville Regional Office
County: Stanly
NC Facility ID: 8400013
Inspector's Name: Tonisha Dawson
Date of Last Inspection: 03/28/2016
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Carolina Stalite Company

Facility Address:
Carolina Stalite Company
12423 Old Aquadale Road
Norwood, NC 28128

SIC: 3295 / Minerals, Ground Or Treated
NAICS: 212399 / All Other Nonmetallic Mineral Mining

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: N/A
NSPS: N/A
NESHAP: N/A
PSD: N/A
PSD Avoidance: N/A
NC Toxics: N/A
112(r): N/A
Other: TV Permit Renewal

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Joe Konzelmann Environmental Coordinator (704) 279-2166 PO Box 1037 Salisbury, NC 28145	Charles Newsome General Manager PO Box 1037 Salisbury, NC 28145+1037	Tim Agner Manager of Engineering Services (704) 279-2166 PO Box 1037 Salisbury, NC 28145+1037

Application Data

Application Number: 8400013.16A
Date Received: 03/28/2016
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 03225/T40
Existing Permit Issue Date: 11/20/2013
Existing Permit Expiration Date: 12/31/2016

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2014	---	---	---	---	0.0500	---	00E+00 [Antimony & Compounds (total ma]
2013	---	---	---	---	0.0200	2.50E-06	2.50E-06 [Manganese & compounds]
2012	---	---	---	---	0.0300	5.00E-06	5.00E-06 [Manganese & compounds]
2011	12.29	6.75	0.2200	0.0900	2.29	0.2117	0.1565 [Hydrogen fluoride (hydro fluori]
2010	141.50	77.68	0.4700	0.2800	23.00	2.29	1.70 [Hydrogen fluoride (hydro fluori]

Review Engineer: Betty Gatano

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 03225/T41
Permit Issue Date:
Permit Expiration Date:

1. Purpose of Application

Carolina Stalite Company, (Stalite) currently holds Title V Permit No. 03225T40 with an expiration date of December 31, 2016 for a lightweight aggregate manufacturing facility in Norwood, Stanly County, North Carolina. This permit application is for a permit renewal. The renewal application was received on March 28, 2016, or at least nine months prior to the expiration date, as required by General Permit Condition 3.K. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

2. Facility Description

Stalite crushes shale to make lightweight aggregate for sale. The facility processes the aggregate in kilns that are permitted to burn coal, and fuel oil to make lightweight aggregate for the construction industry. The aggregate raw material, in the form of rock is received from an adjacent quarry, heat expanded in the kilns, and then crushed and screened to size. The facility normally operates seven days per week, but the facility is shutdown at this time.

3. History/Background/Application Chronology

Permit History since Previous Permit Renewal

January 13, 2012	TV permit renewal issued. Air Permit No. 03225T39 was issued on January 13, 2012 with a permit expiration date of December 31, 2016.
November 20, 2013	Air Permit No. 03225T40 was issued as a minor modification. The permit modified the Manufactured Soil Operation, which involves blending (pile mixing) of sand, compost and lightweight product to produce a "manufactured soil product" for landscape/horticultural applications.

Application Chronology

March 28, 2016	Received application for permit renewal.
March 30, 2016	Sent acknowledgment letter indicating that the application for permit renewal was complete.
April 7, 2016	Tonisha Dawson from the Mooresville Regional Office (MRO) provided regional comments on the permit application.
July 18, 2016	Betty Gatano e-mailed Tonisha Dawson regarding questions about source testing under NC Air Toxics. Ms. Dawson responded via e-mail on July 19, 2016.
July 20, 2016	Draft permit forwarded for comments.

July 27, 2016 — Comments received from Samir Parekh, Stationary Source Compliance Branch (SSCB), on Compliance Assurance Monitoring (CAM) requirements in the permit.

August 1, 2016 — Comments received from Mark Cuilla, Permitting Supervisor.

August 11, 2016 — Comments received from Marshall Rackley, consultant for the facility.

August 15, 2016 — Betty Gatano sent an e-mail to Tonisha Dawson of MRO requesting information about the operational status of the equipment in the manufactured soil operation (ID Nos. ES-MSH-1, ES-MSH-2, ES-MSH-3, ES-MSH-4, ES-MSC-1, ES-MSC-2, ES-MSC-3, and ES-MSL-1). Ms. Dawson responded via e-mail on August 18, 2016 and indicated none of the equipment has been installed.

August 19, 2016 — Marshall Rackley e-mailed a copy of construction notice for Kiln ES-9. The notice was dated November 12, 2010.

August 24, 2016 — Draft permit and permit review sent to public notice.

4. Permit Modifications/Changes and TVEE Discussion

The following table describes the changes to the current permit as part of the permit renewal.

Pages	Section	Description of Changes
Cover and throughout	--	Updated all dates and permit revision numbers.
Insignificant Activities	--	Added standard footnotes for insignificant activities.
7	1.0 – Equipment List	• Removed asterisks and associated footnote specifying the manufacturing soil operations are minor modifications. • Removed the coal conveyor belt (ID No. CCB-1) and the railcar unloading hopper (ID No. CCH-1). In an e-mail dated August 10, 2016, the consultant for the Permittee indicated these emission sources have been removed from the facility. • Removed hydrated lime silo (ID No. ES-LS1) and associated bagfilters (ID Nos. CD-7B or CD-8B). In an e-mail dated August 10, 2016, the consultant for the Permittee indicated the silo has been removed from the facility.
8 – 9	2.1.A – Emission Sources	Reformatted and clarified the emission sources subject to regulations under Section 2.1.A. of the permit.
11	2.1.A.2.c	Removed statement specifying that "the types of materials and finishes" should be monitored. This requirement is not applicable to the raw material silos.
14	2.1.A.5.b	The testing requirement for 15A NCAC 02D .0530 incorrectly referenced a percent reduction. Corrected the testing condition to reference the BACT limits.
15	2.1.B – Regulation Table	Removed reference to sulfur dioxide under Compliance Assurance Monitoring (CAM). No CAM is required for sulfur dioxide emissions from the kilns (ID Nos. ES-7 and ES-8).
15	2.1.B.1.a	Added statement regarding general compliance with 15A NCAC 02D .0511.

Pages	Section	Description of Changes
16	2.1.B.1.d	Updated requirements for testing of the lightweight aggregate kilns (ID Nos. ES-7 and ES-8) for compliance with 15A NCAC 02D .0511, "Particulates from Lightweight Aggregate Processes."
17 – 18	2.1.B.2.d (new numbering)	• Moved permit condition for CEM monitoring downtime and reformatted the permit condition. • Renumbered the permit accordingly.
18	2.1.B.5.h	Reformatted permit condition.
23	2.1.B.6	Updated 15A NCAC 02D .0614, Compliance Assurance Monitoring, for lightweight aggregate kilns (ID Nos. ES-7 and ES-8).
24 – 27	2.1.C	Removed the coal conveyor belt (ID No. CCB-1) and the railcar unloading hopper (ID No. CCH-1) throughout permit condition. In an e-mail dated August 10, 2016, the consultant for the Permittee indicated these emission sources have been removed from the facility.
25	2.1.C.2.c	Removed statement specifying that "the types of materials and finishes" should be monitored. This requirement is not applicable to the coal silo.
27	2.1.C.4.b.	The testing requirement for 15A NCAC 02D .0530 incorrectly referenced a percent reduction. Corrected the testing condition to reference the BACT emission limits.
29	2.1.D.3	Added a reference to require notification for start of the manufactured soil operation.
29	2.1.E – Regulations Table	Added reference to CAM for lightweight aggregate kiln (ID No. ES-9).
32	2.1.E.1.e (new numbering)	• Moved permit condition for CEM monitoring downtime and reformatted the permit condition. • Removed reference to %EE, which is not used in the percent monitor downtime equation. • Renumbered the permit accordingly.
34 – 36	2.1.E.5	Added permit condition for 15A NCAC 02D .0614, Compliance Assurance Monitoring, for lightweight aggregate kiln (ID No. ES-9).
37 – 38	2.2.A – Emission Sources	Reformatted and clarified the emission sources subject to regulations under Section 2.2.A. of the permit.
38	2.2.A.1.i	Added a noncompliance statement.
39 – 56	2.2.B.1	Reformatted permit condition to follow standard permitting structure.
56	2.2.B.1.b.iii (new numbering)	Removed noncompliance statement under 15A NCAC 02D .1100. Noncompliance statements are not applicable for state-enforceable only requirements.
56	2.2.B.1.b.iv (new numbering)	• Modified the testing requirement under 15A NCAC 02D .1100, to require testing for benzene and nickel. The Permittee has not previously conducted testing for these toxic air pollutants. • Removed noncompliance statement under 15A NCAC 02D .1100.
56	2.2.C.1	Reformatted permit condition to follow standard permitting structure.
57 – 67	3.0	Updated the General Conditions and the List of Acronyms to the most current version (V4.0: 12/17/2015).

The following changes were made to the Title V Equipment Editor (TVEE) under this permit renewal.

- Removed the railcar unloading hopper (ID No. CCH-1). In an e-mail dated August 10, 2016, the consultant for the Permittee indicated these emission sources have been removed from the facility.
- Removed the coal conveyor belt (ID No. CCB-1). In an e-mail dated August 10, 2016, the consultant for the Permittee indicated these emission sources have been removed from the facility.
- Removed hydrated lime silo (ID No. ES-LS1) and associated bagfilters (ID Nos. CD-7B or CD-8B). In an e-mail dated August 10, 2016, the consultant for the Permittee indicated the silo has been removed from the facility.

5. Regulatory Review

Stalite is subject to the following regulations. The permit will be updated to reflect the most current stipulations for all applicable regulations.

- 15A NCAC 02D .0501(e), Compliance with Emission Control Standards – In accordance with 15A NCAC 02D .0501(e), Stalite previously demonstrated via air modeling the alternative mix of controls as allowed under 15A NCAC 02D .0501(d) was equivalent to the existing requirements of the state implementation plant in total allowed emissions, enforceability, reliability, and environmental impact. This requirement mandates the emission source be operated in association with a control device or in such manner that the emission source will not violate the 02D .0400 ambient air quality standards for total suspended particles (TSP), PM_{10}, and sulfur dioxide (SO_2). The modeling analysis was based upon the limitations specified in Section 2.2.A.1 in the air permit. Stalite has to conduct monitoring, recordkeeping, and reporting to ensure compliance with the limitations. A noncompliance statement was added to the permit condition. No other changes to the permit are required, and continued compliance in anticipated.

  Stalite added a new crusher (ID No. APCJ-1), portable screen feed hopper (ID No. ATS-1), and two new engines (ID Nos. APCJ-Eng-1 and ATS-1-Eng) under Air Permit No. 03225T38 issued on October 12, 2011. As indicated in the associated permit review,[1] the addition of these emission sources did not trigger a reevaluation of the air modeling used to ensure compliance with the National Ambient Air Quality Standards for emissions of particulate matter. Thus, these emission sources (ID Nos. APCJ-1, ATS-1, APCJ-Eng-1, and ATS-1-Eng) are not subject to 15A NCAC 02D .0501(e).

- 15A NCAC 02D .0511, Particulates from Lightweight Aggregate Processes – This rule applies to many emission sources at Stalite, as discussed below:
  - Conveyors, screens, and transfer points – Stalite must control emissions from conveyors, screens, and transfer points, such that the applicable opacity standards are not exceeded. No monitoring, recordkeeping, or reporting is required, and continued compliance is anticipated.
  - Three lightweight aggregate kilns including clinker coolers (ID Nos. ES-7, ES-8, and ES-9) – This rule requires particulate matter (PM) from the kilns to be reduced by 95 percent by an air pollution control device. Bagfilters control PM emissions from kilns ES-7 and ES-8. To ensure compliance, Stalite was required to conduct testing of kilns ES-7 and ES-8 by May 23, 2009. The most recent stack testing results for these kilns demonstrates compliance with this regulation as shown in the table below.

[1] Charlie Yirka (10/12/2011)

Kiln No.	Test Date	PM Removal Efficiency
ES-7	September 10, 2008	99.76%
ES-8	September 11, 2007	99.5%

The permit further indicates no additional PM testing is required during the term of the permit if the test results show a PM emission control efficiency greater than or equal to 99%. This requirement was met as shown in the above table. The permit will be updated to require testing within 18 months of restart of the kilns (ID Nos. ES-7 and ES-8). Continued compliance is anticipated.

Stalite is also required to conduct monthly visible inspections and annual internal inspections of the bagfilters (ID Nos. CD-7B and CD-8B) and to submit reports of the monitoring activities semiannual. No changes to these permit conditions are required under this renewal, and continued compliance is anticipated.

Kiln ES-9 has not yet been constructed but will be required to control PM emissions with a bagfilter. Stalite will be also required to conduct testing to demonstrate compliance with 02D .0511 within 180 days of startup of this kiln.

- Crushers (ID Nos. APJC-1, FCS-2, and FCS-3) – The rule requires crushers to be controlled with wet suppression. Stalite has to conduct daily observations to ensure that the control devices are operating properly. No changes to the permit are required under this renewal, and continued compliance is anticipated.
- Coal handling emission sources – Stalite has to conduct weekly visible emissions observations for these emissions sources for compliance with 02D .0511. No changes to the permit are required under this renewal, and continued compliance is anticipated.
- Soil handling emission sources – No monitoring is required to ensure compliance with 02D .0511 for the manufactured soil operations. No changes to the permit are required under this renewal, and continued compliance is anticipated.

- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes – Five raw material silos (ID Nos. RCS-18, RCS-19, RCS-20, RCS-92, and RCS-93), four finished product storage silos (ID Nos. FCS-22 through FCS-25), and the coal silo (ID No. CCS-1) are subject to 02D .0515. No monitoring or reporting is required for these sources, but Stalite must maintain production records such that the process rates for the raw material silos can be determined. The permit condition was modified to remove reference to the types of materials and finishing, which are not applicable to these emission sources. No other changes to the permit are required, and continued compliance is expected.

  The dust silo (ID No. DSC-1) with associated bagfilter (ID No. DSC-1B) installed on the inlet and water spray (ID No. DSC-2B) on the screw auger dust unloading system and the dust silo (ID No. DS-3C) with associated bagfilter (ID No. DS-3CB) are subject to 02D .0515. Stalite must conduct monthly visible inspections of the duct work and bagfilters and annual internal inspections of the bagfilters for structural integrity. Recordkeeping and reporting are also required. No changes to the permit are required, and continued compliance is expected.

- 15A NCAC 02D .0516, Sulfur Dioxide from Combustion Sources – Two portable screener diesel engines (ID Nos. PSG-1 and ATS-1-Eng) and the portable self-propelled jaw crusher diesel engine (ID No. APJC-1) are subject to 02D .0516. No monitoring, recordkeeping, or reporting is required when diesel fuel is fired in these engines because of the low sulfur content of the fuel. Diesel fuel is inherently low enough in sulfur that continued compliance is expected. No changes to the monitoring, recordkeeping, or reporting are required under this permit renewal.

  Two lightweight aggregate kilns including clinker coolers (ID Nos. ES-7 and ES-8) and are also subject to 02D .0516. Sulfur dioxide emissions are controlled via a lime slurry injection system installed on the exhaust for each of the kilns. Stalite is also required to install a SO_2 continuous emissions monitoring system (CEMs) on the exhaust of each kiln. No changes to the monitoring, recordkeeping, or reporting are required under this permit renewal, and continued compliance is anticipated.

  The lightweight aggregate rotary expansion kiln including clinker cooler (ID No. ES-9) has not yet been constructed. As with the other two kilns, emissions of SO_2 will be controlled via a lime injection slurry and will be monitored via a SO_2 CEMs.

- 15A NCAC 02D .0521, Control of Visible Emissions – Numerous emission sources at Stalite are subject to 02D .0521. For all subject emission sources, including kiln ES-7, the facility has to conduct weekly visible emission observations to ensure compliance with 02D .0521. Associated recordkeeping and reporting is also required. Continued compliance is anticipated.

  Kilns ES-8 and ES-9 are subject to opacity requirements under NSPS and must meet that opacity standard rather than the standard in 02D .0521.

- 15A NCAC 02D .0524, New Source Performance Standards (NSPS) – The lightweight aggregate rotary expansion kilns including clinker coolers (ID Nos. ES-8 and ES-9) are subject to the "Standards of Performance for Calciners and Dryers in Mineral Industries," 40 CFR Part 60 Subpart UUU. More discussion on NSPS is provided under Section 6.

- 15A NCAC 02D .0530, Prevention of Significant Deterioration (PSD) – Stalite is subject to Best Available Control Technology (BACT) limits under 02D .0530 for PM_{10}, $PM_{2.5}$, NO_x and SO_2. More discussion on these BACT limits is provided in Section 6.

- 15A NCAC 02D .0535, Excessive Emissions and Malfunction – Prior to the installation of kilns ES-8 and ES-9, DAQ requested Stalite develop a malfunction abatement plan (MAP) under 02D .0535 for all kilns at the facility at that time. The lightweight aggregate kiln including clinker cooler (ID No. ES-7) is the only remaining kiln affected by the MAP. The requirement to follow the MAP will remain in the permit for kiln ES-7. Continued compliance is anticipated.

- 15A NCAC 02D .0540, Particulate from Fugitive Dust Emission Sources – This condition is applicable facility-wide and is state-enforceable only. Requirements for 02D .0540 are provided in Section 3.0.MM under the General Conditions. No changes are needed under this permit renewal, and continued compliance is anticipated.

- 15A NCAC 02D .0614. Compliance Assurance Monitoring (CAM) – The three lightweight aggregate kilns including clinker coolers (ID Nos. ES-7, ES-8, and ES-9) with associated bagfilters (ID Nos. CD-7B, CD-8B, and CD-9B), respectively, are subject to CAM. More discussion on CAM is provided in Section 6.

- 15A NCAC 02D .1100, Control of Toxics Air Pollutants – This condition is state-enforceable only. Stalite is subject to 02D .1100 for numerous Toxic Air Pollutants (TAPs). More discussion on NC Air Toxics is provided in Section 7.

- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – This condition is applicable facility-wide and is state-enforceable only. No changes are needed under this permit renewal, and continued compliance is anticipated.

- 15A NCAC 02Q .0317, Avoidance Conditions – Stalite has accepted avoidance conditions for 02D .0530, PSD, for PM, PM_{10}, NO_x, and SO_2. More discussion on PSD avoidance is provided under Section 6.

6. NSPS, NESHAPS/MACT, NSR/PSD, RACT, 112(r), CAM

NSPS

The lightweight aggregate kilns (ID Nos. ES-8 and ES-9) are subject to the "Standards of Performance for Calciners and Dryers in Mineral Industries," 40 CFR Part 60 Subpart UUU. This NSPS applies to each calciner and dryer at a mineral processing plant that is constructed, modified, or reconstructed after April 23, 1986. As defined in the rule, calciner means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces such as kilns ES-8 and ES-9.

The kilns have to meet the following emission standards under NSPS:
- PM shall not exceed in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)]
- Visible emissions shall not exceed 10 percent opacity.

The most recent PM testing for kiln ES-8 was conducted on September 7, 2006 and demonstrated compliance, as shown in the table below.

Pollutant	Test Result	Emission Limit	Compliance
Particulate Matter	0.004 g/dscm	0.092 g/dscm	Yes

Stalite uses a dry control system to comply with the PM and opacity standards under NSPS Subpart UUU. The DAQ has previously determined kiln ES-8 is exempted from requirements to install a continuous opacity monitor (COM) under 40 CFR 60.734.[2] To ensure compliance with the opacity limit, Stalite must conduct weekly visible emission observations from the kilns and associated recordkeeping and reporting. No changes to the permit are required and continued compliance is anticipated.

[2] Rahul Thaker (02/02/2010)

Kiln ES-9 has not been constructed. Stalite will be required to conduct an initial performance test for PM emissions within 180 days of its initial startup as per 40 CFR 60.8. Stalite will also be required to conduct visible weekly emissions observations for compliance with the opacity limit. Compliance is anticipated.

NESHAPS/MACT

Stalite is a minor source of hazardous air pollutants and is not currently subject to a Maximum Achievable Control Technology Standard (MACT). This permit renewal does not affect the MACT status of the facility.

PSD

Stanly County is designated as in attainment. Stalite is a major stationary source under PSD. BACT limits and PSD avoidance limits applicable to the facility are discussed in this section.

PSD Avoidance Limits

The table below lists the avoidance limits and provides information on the reason each condition was added to the permit. No changes to the permit are required, and continued compliance is anticipated.

Source Description	Pollutant	Limits (tpy)	Comments
Two lightweight aggregate kilns including clinker coolers (ID Nos. ES-7 and ES-8)	NO_x	416	This avoidance condition was included in the initial Title V permit, Air Permit No. 03225T13, issued on 06/18/2001.
One lightweight aggregate kiln including clinker cooler (ID No. ES-8)	NO_x	135.4	These avoidance conditions were added under Air Permit No. 03225T20. The permit modification was to install a clinker cooler on the discharge end of kiln 8. NOx The avoidance limit was based on 39.9 tpy plus actual emissions of 95.5 tpy of NOx. The heat input was limited to 439,096 mmBtu/yr.
	SO_2	343.2	SO2 The avoidance limit was based on 39.9 tpy plus actual emissions of 303.3 tpy of SO2. The heat input was limited to 439,096 mmBtu/yr.
	PM	36.8	PM The avoidance limit was based on 24.9 tpy plus actual emissions of 11.9 tpy of PM. The heat input was limited to 236,074 mmBtu/yr.
	PM_{10}	26.8	PM10 The avoidance limit was based on 14.9 tpy plus actual emissions of 11.9 tpy of PM. The heat input was limited to 236,074 mmBtu/yr. See permit review for Air Permit No. 03225T20 for full discussion (Rahul Thaker, 12/01/2003).

BACT Limits

Stalite is subject to BACT limits under 02D .0530 for PM_{10}, $PM_{2.5}$, NO_x and SO_2. The BACT limits are associated with project to construct and operate one lightweight aggregate kiln (ID No. ES-9) and associated material handling and storage activities. The BACT limits were added to the permit under Air Permit No. 03225T36 issued on March 22, 2010, and the permit review for that permit provides details about the establishment of the BACT limits[3]. The BACT limits are provided in the table below, and no changes to the permit are required under this permit renewal.

Rule 15A NCAC 02D .0530(l) incorporates by reference 40 CFR 51.21(r)(2) regarding the period of validity of approval to construct. The permit extension provision in 40 CFR 52.21(r)(2) establishes that "approval to construct [a new major stationary source or major modification] shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time." In a letter dated November 10, 2010, Stalite stated they had started foundation work on kiln ES-9. Construction began on October 27, 2010, although construction of the kiln and associated equipment has not been completed at this time. Should the facility want to complete construction of this emission source in future, Stalite may need to request an extension or conduct a re-evaluation of the BACT limits.[4] The BACT limits for kiln ES-9 will not be updated under this permit renewal.

Emission Source	Pollutant	BACT Limit	Control Devices
Light weight aggregate (ID No. ES-9)	SO_2	2.75 lb/ton of clinker (CEM: 30-day rolling average) and 1 %w coal sulfur content (based upon coal supplier certification per total shipment received)	lime slurry injection
	NOx (as NO_2)	0.84 lb/million Btu heat input (Stack Test: 3-hour average)	good combustion control

[3] Rahul Thaker (03/22/2010)

[4] Page, Stephen (Office of Air Quality Planning and Standards). Guidance to Regional Air Division Directors, Regions 1-10. 2014 January 31. https://www.epa.gov/sites/production/files/2015-07/documents/extend14.pdf

Emission Source	Pollutant	BACT Limit	Control Devices
	PM_{10}	0.20 lb/ton of clinker (filterable and condensible) and 0.01grain/dscf (filterable only) (Stack Test: 3-hour average)	baghouse
	$PM_{2.5}$	0.12 lb/ton of clinker (filterable and condensible) and 0.01 grain/dscf (filterable only) (Stack Test: 3-hour average)	Baghouse
Raw Material Conveyors (ID Nos. RCS-91, RCS-94 and RCS-95)	PM_{10} (filterable only)	7% opacity (6-minute average)	None
	$PM_{2.5}$ (filterable only)	7% opacity (6-minute average)	None
Clinker Conveyors (ID Nos. FCS-44 and FCS-47)	PM_{10} (filterable only)	7% opacity (6-minute average)	water spray
	$PM_{2.5}$ (filterable only)	7% opacity (6-minute average)	water spray
Clinker Conveyors (ID Nos. FCS-45 and FCS-46)	PM_{10} (filterable only)	7% opacity (6-minute average)	None
	$PM_{2.5}$ (filterable only)	7% opacity (6-minute average)	None
Coal Conveyors (ID Nos. CCB-4 and CCB-5)	PM_{10} (filterable only)	10% opacity (6-minute average)	None
	$PM_{2.5}$ (filterable only)	10% opacity (6-minute average)	None
Raw Material Silos (ID Nos. RCS-92 and RCS-93)	PM_{10} (filterable only)	7% opacity (6-minute average)	None
	$PM_{2.5}$ (filterable only)	7% opacity (6-minute average)	None
Dust Silo (ID No. DS-3C)	PM_{10} (filterable only)	7% opacity (6-minute average)	baghouse
	$PM_{2.5}$ (filterable only)	7% opacity (6-minute average)	baghouse

Emission Source	Pollutant	BACT Limit	Control Devices
Coal Silo (ID No. CCS-1)	PM_{10} (filterable only)	20% opacity (6-minute average)	None
	$PM_{2.5}$ (filterable only)	20% opacity (6-minute average)	None
Clinker Pile (ID No. FP-2)	PM_{10} (filterable only)	No visible emissions (Method 22)	water spray
	$PM_{2.5}$ (filterable only)	No visible emissions (Method 22)	water spray
Coal Hopper (ID No. CCH-3)	PM_{10} (filterable only)	10% opacity (6-minute average)	None
	$PM_{2.5}$ (filterable only)	10% opacity (6-minute average)	None

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in 112(r). This permit renewal does not affect the 112(r) status of the facility.

CAM

40 CFR Part 64 is applicable to any pollutant-specific emission unit, if the following three conditions are met:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the unit's pre-control potential emission rate exceeds either 100 tpy (for criteria pollutants) or 10/25 tpy (for HAPs).

Kilns ES-7 and ES-8 are currently controlled by bagfilters (ID Nos. CD-7B and CD-8B) and are subject to CAM. Requirements for CAM for these emission sources were added under Air Permit No. 03225T30 issued on May 23, 2007. The permit will be updated to add reporting requirements and to remove background on justification of indicators information. Continued compliance is anticipated.

Kiln ES-9, which will be controlled by bagfilter (ID No. CD-9B), was added to the permit under Air Permit No. 03225T36 issued on March 22, 2010. As indicated in the permit application for the TV permit renewal, this kiln is subject to CAM because precontrolled emissions of PM_{10} and SO_2 exceed the major source threshold. A CEMs for SO_2 on kiln ES-9 is required to ensure compliance with 15A NCAC 02D .0516. The CEMs is considered sufficient monitoring such that a CAM plan is not required for this pollutant. A CAM plan is required for particulate matter (PM, PM_{10}, and $PM_{2.5}$) and was included in the application for permit renewal. Stalite proposes daily visible emission monitoring with five excursions allowed per 6-month period. CAM requirements will be added under this permit renewal, and the CAM permit condition for kiln ES-9 is provided in Attachment 1.

7. Facility Wide Air Toxics

Stalite is currently subject to modeled emissions rates per 15A NCAC 02D .1100 on a source-by-source basis. The most recent air modeling was conducted when a new crusher (ID No. APCJ-1), portable screen feed hopper (ID No. ATS-1), and two new engines (ID Nos. APCJ-Eng-1 and ATS-1-Eng) were added to the permit under Air Quality Permit No. 03225T38 issued on October 12, 2011. The current permit contains two sets of permitted limits under the NC Toxics. One set of limits is to be followed before the commencement of operation of kiln (ID No. ES-9), and the other applies after the commencing operation of this kiln.

Section 2.2.B.1 requires Stalite to perform a stack test on one of the kilns (ID Nos. ES-7 and ES-8) within 90 days of initial operation of lime slurry injection system to demonstrate compliance with permitted emission limits under 15A NCAC 02D .1100. The lime slurry injection system for kiln ES-7 began operation on September 9, 2005 and for kiln 8 on September 16, 2005. The DAQ gave an extension until March 31, 2006 to perform the test due to the facility phasing out the use of non-RCRA regulated waste oil in the kilns. Testing of kiln ES-7 was ultimately conducted on March 26 and May 29, 2006. The results of the testing, which were approved by David Hughes of the SSCB in a memorandum dated July 29, 2009, are provided in the table below.

Pollutant	Measured Emission Rate from Kiln ES-7	Emission Limits at the Time of Testing in Air Permit No. 03225T26	Emission Limit in Air Permit No. 03225T40[1]
Arsenic	3.33 lb/yr	3.83 lb/yr	15.35 lb/yr
Beryllium	7.35E-02 lb/yr	101.65 lb/yr	101.78 lb/yr
Cadmium	2.803E-01 lb/yr	149.1 lb/yr	149.1 lb/yr
Chromium	3.49E-03 lb/day	0.107 lb/day	0.107 lb/day
Mercury	4.56E-03 lb/day	7.01 lb/day	7.02 lb/day
Manganese	7.20E-02 lb/day	0.993 lb/day	1.0032 lb/day
Fluorides[2]	0.037 lb/hr 0.88 lb/day	--	2.09 lb/hr 50.18 lb/day

Notes:
1. The air modeling was revised with the addition of a crusher (ID No. APCJ-1), portable screen feed hopper (ID No. ATS-1), and two new engines (ID Nos. APCJ-Eng-1 and ATS-1-Eng) to Air Quality Permit No. 03225T38 issued on October 12, 2011.
2. Carolina Stalite tested for hydrogen fluoride (HF) rather than fluorides during the 2006 testing. The purpose of the HF testing at that time was to determine emission rates for future emission inventories. The HF test results were 0.039 lb/hr. In an e-mail dated August 12, 2016, Gary Saunders of the SSCB indicated dividing the HF value by 1.053 will yield the equivalent of fluorine.

The permit specifies that no additional testing is required if the emissions do not exceed 80% of any emission limits. When compared with the most current modeled limits in the permit, the results of testing are well below 80% of the emission limits. Thus, no additional testing is required for the TAPs in the above table.

The current permit also contains permitted emission limits for benzene and nickel. However, Stalite did not test emissions of benzene or nickel, as these TAPS were not included in the permit at the time testing was conducted. The permit condition will be modified to require testing of emissions benzene and nickel to demonstrate compliance with 02D .1100.

Continued compliance is anticipated.

8. Facility Emissions Review

The potential emissions have not been modified under this permit renewal. Actual emissions for criteria pollutants and HAPs are provided in the header of this permit review.

9. Compliance Status

During the most recent inspection conducted on March 28, 2016 by Tonisha Dawson of MRO, the facility was not in operation. The facility was in in compliance with all applicable air quality regulations and permit conditions due to shutdown. Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was included with the permit renewal.

The facility was issued a Notice of Violation/Notice of Recommendation for Enforcement (NOV/NRE) on September 13, 2010 for failing to continuously monitor the pressure drop across bagfilters (ID Nos. CD-7B and CD-8B), as required by Section 2.1.B.1.g of Air Permit No. 03225T36. A civil penalty in the amount of $2,186, including costs, was assessed on February 16, 2011 for these violations. The penalty was paid in full on March 17, 2011, and the facility has returned to compliance.

10. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. South Carolina and Mecklenburg County Air Quality are within 50 miles of the facility and will be notified accordingly.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this permit application.
- A zoning consistency determination is NOT required for this permit application.
- No permit fee is required for this permit application.

12. Recommendations

The permit renewal application for Carolina Stalite Company in Norwood, Stanly County, NC has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 03225T41.

Attachment 1

CAM Permit Condition for Kiln (ID No. ES-9)

Section 2.1 E.5

5. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING

a. Per 40 CFR 64 and 15A NCAC 02D .0614, the Permittee shall comply with the following.

b. **Background**

i. Emission Unit.

(A) Description. One 60 ton per hour lightweight aggregate kiln with clinker cooler

(B) Identification. **ID No. ES-9**

ii. Applicable Regulation, Emission Limit, and Monitoring Requirements.

(A) Regulation and associated emission limits:

1. 15A NCAC 02D .0511 – particulate matter emissions shall be reduced by at least 95% by weight by the bagfilter
2. 15A NCAC 02D .0524 – particulate matter emissions shall be less than 0.092 gm/dscf (0.04 gr/dscf)
3. 15A NCAC 02D .0530 – emissions of PM_{10} shall be less than 0.20 lb/ton of clinker (filterable and condensible) and 0.01 grain/dscf (filterable only)
4. 15A NCAC 02D .0530 – emissions of $PM_{2.5}$ shall be less than 0.12 lb/ton of clinker (filterable and condensible) and 0.01 grain/dscf (filterable only)

(B) Control Technology. One pulse jet bagfilter (5:1 air-to-cloth ratio; **ID No. CD-9B**)

c. **Monitoring Approach**. The key elements of the monitoring approach for particulate matter, including parameters to be monitored, parameter ranges and performance criteria are presented in the following table. The selected performance indicator is visible emissions.

Measure	Indicator
I. Indicator	Visible emissions
Measurement Approach	Visible emissions from the fabric filter will be monitored daily using EPA Reference Method 22-like procedures
II. Indicator Range	An excursion is defined as the presence of visible emissions. Excursions trigger an inspection and corrective action.
QIP Threshold	The QIP threshold is five excursions in a 6-month period.

Measure	Indicator
III. Performance Criteria	
A. Data Representativeness	Measurements are being made at the emission point (fabric filter outlet).
B. Verification of Operational Status	NA
C. QA/QC Practices	The observer will be familiar with Reference Method 22 and follow Method 22-like procedures.
D. Monitoring Frequency	Observations are done daily.
Data Collection Procedures	VE observations are documented by the observer.
Averaging Periods	NA

Reporting [15A NCAC 2Q .0508(f)]

d. The Permittee shall submit a summary report of all monitoring activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations for the requirements of this permit must be clearly identified. The report shall also include the following information, as applicable:
   i. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
   ii. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
   iii. A description of the actions taken to implement a QIP during the reporting period as specified in 40 CFR 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.